

WHAT IS CLAIMED IS:

1. A variably insulated system, comprising:  
a heat generating core;  
a heat sink; and  
a heat responsive coupling member configured to selectively couple said heat generating core and said heat sink at predetermined temperatures of said heat generating core.
2. The system of claim 1, wherein said predetermined temperature comprises an operating temperature of said heat generating core.
3. The system of claim 1, wherein said heat responsive coupling member comprises a shape memory alloy.
4. The system of claim 3, wherein said heat responsive coupling member further comprises a spring coupled to said shape memory alloy.
5. The system of claim 1, wherein said coupling member comprises a bimetallic strip.
6. The system of claim 1, wherein said coupling member comprises a machine actuated member and a sensor.
7. The system of claim 1, wherein said heat generating core comprises a fuel cell system.
8. The system of claim 7, wherein said heat generating core comprises a solid oxide fuel cell.
9. The system of claim 1, wherein said heat sink comprises a metallic material.
10. The system of claim 9, wherein said metallic material comprises one of copper or aluminum.

11. An electrochemical system, comprising:  
an electrochemical core;  
a heat sink; and  
a heat responsive coupling member configured to selectively couple said electrochemical core and said heat sink at predetermined temperatures of said electrochemical core.

12. The system of claim 11, wherein said predetermined temperature comprises an operating temperature of said electrochemical core.

13. The system of claim 11 wherein said heat responsive coupling member comprises a shape memory alloy.

14. The system of claim 13, wherein said heat responsive coupling member further comprises a spring coupled to said shape memory alloy.

15. The system of claim 11, wherein said coupling member comprises a bimetallic strip.

16. The system of claim 11, wherein said coupling member comprises a machine actuated member and a sensor.

17. The system of claim 11 wherein said electrochemical core comprises a fuel cell system.

18. The system of claim 17, wherein said electrochemical core comprises a solid oxide fuel cell system.

19. The system of claim 11, wherein said heat sink comprises a metallic material.

20. The system of claim 19, wherein said metallic material comprises one of copper or aluminum.

21. A solid oxide fuel cell housing comprising:
  - a solid oxide fuel cell;
  - a heat sink; and
  - a heat responsive coupling member configured to selectively couple said solid oxide fuel cell and said heat sink at predetermined temperatures of said solid oxide fuel cell.
22. The solid oxide fuel cell housing of claim 21, wherein said predetermined temperature of said solid oxide fuel cell comprises an operating temperature of said solid oxide fuel cell.
23. The solid oxide fuel cell housing of claim 21, wherein said heat responsive coupling member comprises a shape memory alloy coupled to a spring.
24. The solid oxide fuel cell housing of claim 21, wherein said heat responsive coupling member comprises a bimetallic strip.
25. The solid oxide fuel cell housing of claim 21, wherein said heat responsive coupling member comprises a machine actuated member and a sensor.
26. The solid oxide fuel cell housing of claim 21, wherein said heat sink comprises a metallic material.
27. The solid oxide fuel cell housing of claim 26, wherein said metallic material comprises one of copper or aluminum.
28. A method of using a variably insulated system, comprising:
  - providing a heat generating core;
  - applying thermal energy to said core; and
  - placing a heat sink in thermal contact with said heat generating core at a pre-determined temperature in response to said application of thermal energy.
29. The method of claim 28, further comprising cooling said heat sink.

30. The method of claim 28, wherein said cooling comprises introducing air flow around said heat sink.

31. The method of claim 28, further comprising removing said heat sink from thermal contact with said heat generating system in response to a decrease in said thermal energy.

32. The method of claim 28, wherein said placing a heat sink in thermal contact with said heat generating core further comprises implementing a heat responsive coupling member.

33. The method of claim 32, wherein said heat responsive coupling member comprises a shape memory alloy coupled to a spring.

34. The method of claim 32, wherein said coupling member comprises a bimetallic strip.

35. The method of claim 32, wherein said coupling member comprises a machine actuated member and a sensor.

36. The system of claim 28, wherein said heat generating core comprises a fuel cell assembly.

37. The system of claim 28, wherein said heat generating core comprises a solid oxide fuel cell.

38. The system of claim 28, wherein said applying thermal energy comprises using a heat exchanger.

39. The system of claim 28, wherein said heat sink comprises a metallic material.

40. The system of claim 39, wherein said metallic material comprises one of copper or aluminum.

41. A variably insulated system, comprising:
  - a heat generating core;
  - a means for dissipating heat from said heat generating core; and
  - a means for coupling for selectively coupling said means for dissipating heat to said heat generating core at predetermined temperatures of said heat generating core.
42. The variably insulated system of claim 41, further comprising means for cooling said means for dissipating heat.
43. The variably insulated system of claim 42, wherein said means for cooling comprise a fan.
44. The variably insulated system of claim 41, wherein said heat generating core comprises a solid oxide fuel cell.
45. The variably insulated system of claim 41, wherein said means for dissipating heat comprise a heat sink.
46. The variably insulated system of claim 45, wherein said heat sink comprises one of copper or aluminum.
47. The variably insulated system of claim 41, wherein said means for coupling comprise a spring coupled to a shape memory alloy.
48. The variably insulated system of claim 41, wherein said means for coupling comprise a bimetallic strip.
49. The variably insulated system of claim 41, wherein said means for coupling comprise a machine actuated member and a sensor.